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ABSTRACT

This research review examines international studies on early childhood education and care, with particular reference to outcomes or benefits related to the child's age, the length of time in early childhood education and care, program type, and scope and type of parental involvement. Research literature from North America, Scandinavia, Britain, Australia, and New Zealand is included. The review demonstrates that high quality care is centrally important if infants are to benefit from the experience of center-based care during the first year of life. Also noted are age-related findings suggesting that poor quality early childhood care and education may have negative outcomes, whereas high quality care enhances infants' social and cognitive development. Contains 141 references. (MDM)

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EDUCATION AND CARE

A Review of International Studies of the Outcomes of Early Childhood Experiences

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EDUCATION AND CARE

A Review of International Studies of the Outcomes of Early Childhood Experiences

Valerie N. Podmore

This project was completed on contract to
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New Zealand Council for Educational Research
Wellington, 1993

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ABSTRACT

The intention of this review was to examine international research on the educational outcomes for children of early childhood education and care. Particular reference was made to outcomes or benefits related to: the child's age; the length of time in early childhood education and care; different programme types; and parental involvement and type of parent involvement.

Throughout the review, both care and education of young children are examined as an integrated concept. The review documents and discusses research literature from several regions, including North America, the Nordic countries, Britain, Australia, and New Zealand. The review includes studies concerned both with the current benefits experienced by children attending early childhood care and education centres, and with the long-term benefits for children. Many of the more recent studies reviewed defined the outcomes in terms of children's cognitive or language development or their social competence in educational settings.

It is recommended that research findings on the beneficial outcomes of early childhood care and education should be interpreted within the context of the local conditions and policies. The international research reviewed shows that high quality care is centrally important if infants are to benefit from the experience of centre-based care during the first year of life. In Sweden, where there is ready access to publicly funded daycare centres which have very high standards, and there are generous parental leave provisions, centre-based and family daycare are strongly associated with long-term educational benefits for infants and toddlers. Attending early childhood care and education centres that have more highly trained staff and quality staff-child ratios has ongoing benefits for 3- and 4-year-old children. It is suggested that research should be developed using a partnership approach, with more collaboration between researchers and early childhood centre personnel, to understand the outcomes of early childhood care and education for children of different ages.

Outcomes associated with the length of time young children spend in early childhood care and education appear to be moderated by aspects of the quality of care received in the centre and at home. Stable, regular attendance at high quality education and care centres enhances children's cognitive and social/personality development. Parents' working conditions have some influence on the length of time children spend at early childhood care centres. Danish researchers and policy makers therefore recommend that financial support of families is needed to balance the length of time that parents spend in the workplace and children spend in early childhood centres.

Evaluations of a range of compensatory early childhood programmes developed in the U.S. suggest that high quality programmes which are adequately staffed and funded can have short and longer term beneficial effects on children's educational achievement. The

more recent research suggests that high quality programmes which are more child-centred rather than drill-and-practice oriented tend to be associated positively with children's cognitive, language, and social development. The findings of international and local studies suggest that characteristics of high quality early childhood programmes include: child-centred, planned educational programmes; high staff-child ratios; trained staff and ongoing in-service training and support; stability of staff and children; small group sizes with mixed age groups (provided that there are high adult-child ratios and the staff are committed to age-integration); active, democratic parental participation; and language maintenance and cultural revival.

The social interaction outcomes seem similar for New Zealand children who attend childcare centres from an early age and those who commence kindergarten later. Several international studies have addressed the problem of erosion of children's primary languages. In Aotearoa, the Kohanga Reo movement is associated with maintenance and revival of te reo Maori, the strengthening of the whanau, and the revitalisation of the marae.

Various types of parent involvement are found in early childhood centres internationally and within New Zealand. Parent involvement in early childhood programmes tends to be associated with positive outcomes for children's social and cognitive development. The types of parent involvement emphasised in the current research are: parent support, parents' professional participation, and parents' involvement in decision making.

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Valerie Podmore
July, 1993

INTRODUCTION

Scope of the Review

This review of international research focuses on:

> the educational outcomes/benefits for children of early childhood education and care.

Specific topics addressed are outcomes or benefits related to: the child's age; the length of time spent in early childhood education and care; different types of programmes, including language immersion and bilingual programmes; and the extent and type of parental involvement.

Most of the research examined in this review was conducted in North America, and also in the Nordic countries, Britain, Australia, and New Zealand. Under the sub-topics, specific studies are discussed within the contexts of these countries: the U.S., Canada, Britain, Sweden, Denmark, Australia, and New Zealand.

Several data bases were searched for research information, including ERIC and searches of the British, Australian, and Canadian Education Indexes. Research and policy information gathered during the author's 1992 visits to Britain, Sweden, Denmark, and Canada are included in the review. Overseas and New Zealand researchers and policy analysts working in related areas were also consulted.

The age range covered in this review is from birth up to 5 years. This excludes most research carried out in kindergartens in North America, because they are attended mainly by children aged over 5 years. The review also excludes studies of older preschool children in Sweden where the age of entry to school is 7 years. This focus on the first 5 years of life is relevant in the context of Aotearoa/New Zealand, where most children commence school on or near their 5th birthdays and schooling is currently compulsory from 6 to 16 years.

Throughout the review, both care and education of young children are examined. As Anne Smith (1993) has explained:

> the harmful dichotomy between education and care has been institutionalised in the early childhood systems of many countries into two separately funded and administered services which are assumed to provide care ***or*** education. (Smith, 1993, p. 3-4)

New Zealand has effectively developed a much more integrated approach, and here early childhood care and education are funded and administered through the Ministry of

Education. Therefore, in the context of Aotearoa/New Zealand it is consistent with current policies and practices, as well as personal philosophy, to review care and education as an integrated concept.

Assessment of Educational Benefits and Outcomes

The review includes studies that are concerned both with the current benefits experienced by children attending early childhood care and education centres, and with the long-term benefits for children. In the studies reviewed, the outcomes or benefits for children have been assessed in a variety of ways. Standardised intelligence tests have been used in many of the early studies, for example in the evaluation of programmes such as Head Start in the U.S. Other studies have defined outcomes mainly in terms of children's cognitive or language development. These studies have used children's scores on tests at school, teacher ratings of children's competence, or observational assessments. Much of the early research with infants was focused on emotional outcomes, and of particular concern was infants' attachment to their mothers. Other studies have documented infants' and children's crying, dependency, and aggression. More recently there has been an emphasis on examining outcomes in terms of children's social behaviour and their social competence in educational settings.

OUTCOMES RELATED TO THE CHILD'S AGE

Research from the United States

Infants Aged Under One Year

A variety of relatively recent research studies and reviews from the U.S. have investigated the outcomes for children who attend childcare centres during infancy (e.g., Belsky, 1986, 1988a, 1988b; Belsky & Rovine, 1988; Black & Arliss, 1990; Clarke-Stewart, 1988, 1989; Honig & Park, 1992; Katz, 1990; Mott, 1991; Phillips, McCartney, Scarr, & Howes, 1987; Richters & Zahn-Waxler, 1988; Scarr & Eisenberg, 1993; Vandell & Corasaniti, 1990). The findings of these studies have varied, with some showing negative outcomes for infants' socio-emotional development, some reporting mixed findings on socio-emotional and cognitive outcomes, and some documenting more positive results.

Several reports with negative findings have already been criticised by reviewers as inappropriately selective or narrow in focus (see Clarke-Stewart, 1988; Phillips et al., 1987; Richters & Zahn-Waxler, 1988). Other studies have provided limited or no details about the type and quality of the centre-based care provided for the infants under scrutiny. Betty Black and Logan Arliss (1990), for example, carried out a small-scale study of the communicative competence of children aged 29 to 64 months who were in full-time daycare. The researchers reported that full-time attendance at childcare centres during the first year of life was related to patterns of communication at age 29 to 64 months associated with low competence. However, the quality of infant care provided in the childcare centres could be judged only retrospectively. Another study by Vandall and Corasaniti (1990), which reported negative outcomes for infants who attended childcare, was carried out in Texas, where according to Katz (1990), relatively low standards of care apply.

A national-level study in the U.S. by Frank Mott (1991) described the links between childcare activities during the first year of children's lives and their later intellectual, social, and emotional development. Mott used the 1986 data file of information about mothers and children from the National Longitudinal Survey of Youth, and children's test scores between ages 1 and 4 years on measures of memory, motor and social development, and on the Peabody Picture Vocabulary Test. He reported that child gender and health influenced the relationship between child care experience and later development. Healthy girls benefitted more from being cared for by persons other than their mothers, whereas infant boys with health problems benefitted socially and emotionally by being cared for by their own mothers. However, it should be noted that this study was concerned more with non-maternal care in general, than with childcare

centre-based care. Non-maternal care included care by fathers, other relatives and friends, as well as childcare centre-based care.

Lillian Katz (1990) identified an obvious limitation of some of the U.S. research concerned with the developmental consequences of various care arrangements. She observed that many studies implicitly contrast poor childcare programmes with idealised home environments, or vice versa:

> Those opposed to public support for child care programs appear to assume that when children are not in child care programs they are in good, or at least adequate home environments. On the other hand, advocates of child care programs seem to assume that good quality education/care settings are readily available to children whose home environments put them at risk for school failure.
> (Katz, 1990, p. 10)

According to Katz, the contrasts made in studies should go at least four ways, including home versus non-home care and adequate versus non-adequate quality of care at each.

Michael Lamb and Kathleen Sternberg (1990) reviewed a variety of North American studies concerned with the impact of daycare in the early years on children's subsequent development. They commented that there is still considerable controversy about the effects of commencing daycare during infancy, and concluded that more systematic research is needed to show how the quality of daycare experience in infancy affects different children.

A study which has taken account of the quality of care received by infants was reported recently by Alice Honig (Honig & Park, 1992). Teachers and observers who were unaware of the participants' infant care histories rated the behaviour of 105 preschool children in 9 urban centres. The preschoolers' average age was 4 years 5 months, and they came from middle-class families. The children were classified, according to the care received in infancy, into 3 different groups: 1) full-time non- parental care begun prior to 9 months, 2) full-time non-parental care begun after 9 months, and 3) no full-time non-parental care for the first 3 years of life. Hierarchial regression analyses showed that current mother-child attachment, and the quality of the centre, were more predictive of child aggression than the age at which the infant entered care. Children who had attended childcare in infancy (from groups 1 and 2) were assessed as twice as aggressive as children who had not attended childcare (group 3). However, children who had received full-time care during the first 9 months (group 1 children) were rated more intellectually competent when compared with children who had not attended childcare (group 3).

Honig and Park's (1992) research therefore emphasises that high quality care is centrally important if infants are to benefit from the experience of centre-based care during the first year of life. This implication is consistent with Honig's earlier work on infant care (e.g., Honig, 1983; Honig & Caldwell, 1981; Honig & Lally, 1988).

Toddlers Aged One to Two Years

Research by Carollee Howes in the U.S. has also emphasised the importance of good quality care (Howes 1986, 1988, 1990, 1991). Howes (1986) investigated the quality of care experienced by 89 families with 18- to 36-month-old children attending childcare centres. She defined childcare centres as high or low quality according to their staff-child ratios, staff training in child development, and the continuity of caregivers. High quality centres had adult-child ratios of 1:4 or better for toddlers aged 18-29 months, they retained the same one or two primary caregivers over the course of one year, and most of the caregivers had completed degrees in child development and also participated in regular inservice training. Low quality centres had caregiver-child ratios of 1:5 or less, at least three and up to ten primary caregivers worked at the centre during the course of a year, and caregivers had no formal training in child development and no regular inservice training. Howes reported that, compared with the low quality childcare centres, the high quality childcare centres had parents who were less stressed and more satisfied with child care, more involved in the centre, and more effective at having their children comply with their requests. The toddlers at high quality centres were described as more self-regulated than those attending the lower quality centres, and observations showed that in the high quality childcare centres, children were more compliant with adults and less resistant to adults' suggestions.

In a later study, Carollee Howes (1988) reported that, 3 years after entry to school, children who had attended high quality, stable childcare showed greater academic skills and school social skills and fewer behavioural problems than their peers. When discussing the findings on childcare, Howes described complex interactions between the quality of care, family characteristics, child gender, and the child's age of entry as predictors of young children's cognitive development.

Carollee Howes (1990, 1991) has subsequently suggested that the age of entry to childcare centres appears inadequate as a single predictor of children's social competence with their peers. Similarly, she has pointed out that age of entry by itself has not related consistently to children's "adaptive language development" or their communicative competence, and this suggests "that childcare for infants and toddlers is not a risk factor" (Howes, 1991, p. 25).

Children Aged Three and Four Years

A longitudinal study has documented the outcomes of high and low quality childcare experienced by 4-year-old children (Vandell, Henderson, & Wilson, 1988). At 6 different daycare centres in Texas, 20 4-year-olds from middle-class families were observed during unstructured play. The children's positive and negative interactions with peers, their solitary play, and their "unoccupied" behaviour were coded. The childcare centres they attended were assessed as excellent, moderate, or poor. At the age of 8 years, follow-up observations of the 20 children were videotaped in a laboratory playroom during a triadic

play session. The triads included a child from each of the three different childcare quality groups. The authors reported significant continuity between the children's interactions at 4 years and 8 years of age. Children who showed more positive interactions with adults at the age of 4 years were rated more socially competent, co-operative, empathic, and able to negotiate conflict by the age of 8 years. Compared to the children from poorer quality daycare, those from better quality centres showed more friendly interactions and fewer unfriendly interactions with peers, and were judged more socially competent, happier, and less shy. Although the samples were small in this study, and there was a change from a natural to a laboratory setting for the follow-up observations, the findings suggest that high quality childcare centres may have ongoing benefits for 4-year-old children.

In another study concerned with children's interactive behaviour, John Love (1993) reported observations of 3- and 4-year-old children at 122 daycare classrooms in the state of California. Several measures were used to determine the quality of the daycare centres in terms of staff-child ratios, caregiver-child interactions, and caregiver behaviour or style (rated on the Arnett scale). Children's behaviour, stress, and behaviour problems were observed and rated. Two dimensions of the children's behaviour were found to relate consistently to the quality of the childcare centres' programmes. These were: indicators of stress and other negative behaviour (including crying and fighting), and the percentage of time the children were uninvolved in classroom activities. At centres with high quality programmes, the children were already benefitting by showing fewer incidents of these more negative types of behaviour.

Many studies in the U.S. have evaluated the effectiveness of different compensatory educational programmes for 3- and 4-year-old children. For example, a team of researchers associated with the Perry Preschool Program in Michigan, U.S. examined 7 different studies of the effectiveness of early childhood programmes for 3- and 4-year-old children living in poverty (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984). The researchers concluded that 6 of the 7 studies showed early childhood education had immediate positive effects on children's intellectual performance, 6 of the 7 studies indicated that early childhood education can halve the number of children placed in special classes, 3 studies showed early childhood education can reduce the number of high school drop outs, and the evidence on positive effects on children's scholastic achievement was mixed. The Perry Preschool study also reported long-term benefits such as delinquency prevention and a reduction in teenage pregnancies.

Studies from the U.S. on educational programmes for children aged 3 and 4 years are examined in greater detail later in this review, under the section on outcomes of different types of early childhood programmes. Overall, adequately funded, high quality programmes for 3- and 4-year-old children have shown positive educational outcomes.

Mixed Age Grouping

Another dimension to the age-related benefits of early childhood care and education is the situation of mixed-age grouping of children. Lillian Katz and her colleagues have documented several social, therapeutic, and cognitive benefits experienced by children in mixed-age groups and multi-age programmes (Katz, Evangelou, & Hartman, 1989). Social benefits they identified included: enhancement of prosocial behaviour and self-regulation, an increase in younger children's social participation, and the creation of complex play for younger children by older children. Interpreting these studies within the theoretical framework of Vygotsky's work, Katz and colleagues also reported that older children operate well within younger children's zone of proximal development (see Vygotsky, 1978). Another aspect of learning observed in mixed age groups was that of children sensitively adjusting their communication for listeners.

Findings from Sweden

Bengt-Erik Andersson (1989) summarized several problems associated with earlier research into the outcomes of early care and education outside the home. One error he identified was a tendency to treat daycare as a "homogeneous context, when it includes an array of arrangements". This led to grouping a variety of care arrangements together within studies, and also to comparing across studies the effects of services that differ considerably in quality and content (Andersson, 1989, p. 858). Another flaw in the design and reporting of studies has been the omission of details such as the child's age of entry to daycare and the duration of experience of daycare. Andersson described the most major problem as a lack of information about the long-term effects of childcare, a problem which he addressed in his Swedish longitudinal study.

Infants and Toddlers

Bengt-Erik Andersson (1989, 1992) and his team of researchers in Stockholm and Goteborg carried out long-term follow-up studies of children who started attending daycare centres at an early age. They followed a sample of 128 children from the first year of life up to age 13 years. Andersson (1992) reported that, compared with children who commenced daycare at an older age and with children who were cared for in their own homes, children who started centre-based or family daycare before the age of 1 year tended to perform better in school and to be rated more highly by their teachers on their social and emotional behaviour at age 8 years and again at age 13 years.

Bengt-Erik Andersson pointed out that these positive findings about early childcare experience need to be understood within the Swedish context. The context of the research differs from American studies because family and child policies in Sweden include very high standards of daycare, and provision for leave on full pay for parents

with infants aged under 6 months. The Swedish findings certainly support the long-term benefits of good quality centre-based childcare for toddlers.

In 1985 the Swedish Parliament voted in support of a proposal that by 1991, all children aged from 1½ to 6 years of age should have the right to a place in public childcare while their parents worked or studied (Gunnarsson, in press). Therefore, another aspect of the Swedish context affecting current childcare provision is the national policy of providing quality public childcare for all children.

Findings from Denmark

Mixed Age Grouping

By drawing on policy documents, personal experiences, and research findings, Jytte Juul Jensen has supported the case for mixed-age grouping (Jensen, 1991; Jensen & Langsted, 1988). She described Danish initiatives designed to counteract institutional age-segregation in elementary schools and daycare centres. A Danish government report of 1972, translated and cited by Jytte Juul Jensen, stated:

> Right from early infancy it is important for children to be grouped with others of different ages, just as they would be in a large family... Small children need to be with older children, who play and talk to them and thus stimulate their development just as adults do. Similarly, learning to be considerate and understanding towards small children is important for older children's social development.
> (Jensen, 1991, p. 6)

In a study designed by Jytte Juul Jensen (1991) to document experiences of mixed-age centres, semi-structured interviews were conducted with 3 to 4 of the personnel at each of the 14 existing mixed-age centres in Aarhus, Denmark. These centres catered for children from infancy up to, in some cases, 14 years. The researchers asked in-depth questions about both the positive and the negative outcomes for children attending age-integrated centres. Interviewees emphasised that the main advantages for children attending mixed- age centres were: avoiding changes of surroundings and institutions, and experiencing enhanced group cohesion. Very few conflicts were reported to occur between older and younger children. Jensen concluded that mixed-age institutions shelter young children from the trauma of transitions, that greater stability is offered to children when wider age ranges are catered for within the same centres, and that older children learn to take leadership responsibility and to show consideration to others in such settings. She suggested that young children should benefit from experiencing both age-mate and mixed-age interactions, thereby developing a "broad spectrum of social competencies" (p. 10). Jensen (1991) also noted that staff working in mixed-age centres need a strong commitment to age-integrated care and education.

Australian Research

Infants, Toddlers, and Younger Children

Various aims and recommendations have been developed in Australia to ensure that early childhood education and care benefits each young child. Patricia Sebastian (1988) identified a range of services needed for Australian families with young children aged under 3 years, and specified some priorities when planning for positive outcomes:

> We know what the outcomes are when quality is poor, and we know the cost-effectiveness of quality programs in the long term. But we must speak more loudly and clearly on the issues that are important - issues such as comprehensive programs to enhance the competence and confidence of children and their parents (and not just those to meet a political or economic objective), qualified staff, small group sizes and the essential staff/child ratios to run the programs.
> Furthermore we must press for Australian research. Our programs can hardly reflect the real future needs and outcomes of the Australian community if we have to continually rely on overseas material.
> (Sebastian, 1988, p. 62)

Anne Stonehouse (1991) investigated effective programming for infants and toddlers aged under 3 years. She defined programming broadly as "what adults do and do not do that affects the daily experiences of babies and toddlers." (Stonehouse, 1991, p. 101). Stonehouse listed some research-based determinants of quality such as group size and age range, space, numbers of staff, and staff qualifications, and emphasised that staff at early childhood centres also need to develop sets of aims for young children. Recommendations to enable staff to cater appropriately for children aged under 3 years included: starting with each child, going beyond developmental appropriateness, using power appropriately, avoiding "rampant teaching", programming through the environment, being partners with parents, and attending to professional development.

Benjamin Bradley and Anne Sanson (1992) made several recommendations relevant to Australian and international research on infants in childcare centres. Bradley and Sanson reviewed some of the controversial research on the outcomes of infant daycare and summarised some new developments in the European Community. They advocated abandoning the unrealistic aim of researchers (i.e., Belsky, 1986) to produce "value-free" results on the outcomes of childcare:

> In this case, ***value-free*** is ***valueless***: whatever researchers say about day care only has importance when it contributes in one way or another to our culture's continual reinvention of its child care practices.
> (Bradley & Sanson, 1992, p. 9)

They explained the need to develop ongoing processes of analysis and feedback among those contributing to the quality of infant childcare. Bradley and Sanson recommended developing a partnership approach to research, where practitioners and researchers assume joint responsibility for the research process.

Aotearoa/New Zealand

Infants and Toddlers

Several New Zealand research papers, reviews, and reports have identified the importance of providing good quality care and education for children aged under 2½ years, to ensure beneficial outcomes (Podmore, 1990; Report of the Early Childhood Care and Education Group/The Meade Report, 1988; Smith, Inder, & Ratcliff, 1993). A summary review of research literature on infants and toddlers in childcare centres recommended that researchers should investigate how the needs of infants can best be met within childcare centres (Podmore, 1990). The review paper also pointed out the need to accord greater priority to infants and toddlers in educational planning and resource allocation.

A subsequent study of infants and toddlers in New Zealand childcare centres investigated the organisation of care, the interactive experiences of infants and toddlers, and the perceptions of parents, childcare staff, and other professionals on catering for the needs of infants and toddlers within the centre, family, and community context (Podmore & Craig, 1991). Interviews were conducted with the supervisors at 50% of the centres providing full-day care for infants aged under 2 years in both the greater Auckland and greater Wellington regions. On the basis of these interviews, contrastive categories of organisation were developed. At 6 childcare centres selected to represent contrasting organisational categories, a total of 36 infants who attended full time was observed, and their parents and staff members were interviewed. Negative interactions were observed very rarely, and there were no major differences in staff members' interactions with male and female infants. Compared with younger infants, older toddlers interacted with their peers more frequently. Younger infants cried more often, and staff members tended to talk less frequently to younger infants aged under 18 months than to older toddlers. The interviews showed that most parents and staff members were satisfied by the way in which many of the infants' and toddlers' needs were being met in the childcare centres. These needs included their emotional, attachment, and social needs; their physical and health needs; and their learning needs. Many parents were quite positive, but a few were not satisfied, about the extent to which infants' and toddlers' language needs were being met. In almost all cases, the observed staff-child ratios were better than those required by minimum standards. For many parents and staff members, staff-child ratios were a high priority.

Longitudinal data would be needed to provide information about the long-term benefits of quality early childhood education and care for New Zealand infants and toddlers. Further work in progress by Anne Smith is concerned with staffing issues within New Zealand childcare centres which provide for infants.

Summary

International research has demonstrated that high quality care is centrally important if infants are to benefit from the experience of centre-based care during the first year of life. In Sweden, where there is ready access to publicly funded daycare centres which have very high standards, and there are generous parental leave provisions, centre-based and family daycare have been strongly associated with long-term educational benefits for infants and toddlers.

Research from the U.S. has shown that attending high quality childcare centres has ongoing benefits for 3- and 4-year-old children. In addition, adequately funded, high quality compensatory educational programmes for 3- and 4-year-old children have shown positive educational outcomes.

Danish and North American research has demonstrated that, when there is adequate staffing, mixed aged grouping in early childhood centres has beneficial outcomes for children. In Sweden and Australia researchers have suggested that a partnership approach to research is needed. It has also been recommended that, to enhance understanding of the outcomes of early childhood care and education for children of different ages, research should be developed and interpreted within the context of local conditions and policies.

LENGTH OF TIME IN EARLY CHILDHOOD EDUCATION AND CARE

Research from the United States

In a study of the educational benefits of a daycare programme in Atlanta, Emma Popwell, Myrtice Taylor, and Alonzo Crim (1987) differentiated between children who had no or less than 6 months of daycare experience, and those who had spent more than 6 months in day care. An underlying assumption of this retrospective study was that a minimum of 6 months' attendance at childcare centres is needed for the experience to have lasting outcomes. Using a "follow-back strategy", the researchers compared the school and other achievement of students from three groups: those in the Atlanta Public Schools day care programme, those in non-Atlanta Public Schools childcare programmes, and those with no daycare or less than 6 months' daycare prior to kindergarten enrolment. Significant differences were reported in the reading and mathematics scores on the California Achievement Tests of the groups of children who attended daycare, and the group of children with no or less than 6 months experience of daycare. These differences, evident by the second and third grade at school, suggested that children with more than 6 months of daycare experience scored more highly on mathematics and also more highly on reading.

Several studies have investigated the impact of the length of the day experienced at pre-kindergartens by children from advantaged families. Kathleen Pinkett (1985), for example, studied the long-term effects of preschool attendance and type on 226 third-grade children drawn from schools which were classified as middle and upper-middle class. The children's parents completed a Preschool Information Questionnaire. The children's social competence, defined as the absence of problem behaviour, was assessed on the Behavior Evaluation Scale; and their cognitive competence, defined as cognitive ability and reading and mathematics achievement, was assessed on ability and achievement tests. Children who had attended half-day preschool scored higher on social competence and cognitive ability than children who had attended all-day care. The quality of care received was not addressed, and the authors commented that the critical question arising from the research was: how do specific types of preschool experience relate to development in later years?

An accumulating body of research has described the outcomes of full-day versus half-day attendance at kindergartens (Caldwell, 1989; Glazer, 1985; Karweit, 1987; Olsen, 1989; Olsen & Zigler, 1989; Puleo, 1988). Overall, recent studies tend to report that higher reading and cognition scores are found among children who attend full-day kindergarten programmes (e.g., Goodwin, 1989; Johnson, 1989). In-depth discussion of these studies is beyond the scope of this review, however, because children in the U.S. usually commence kindergarten at 5 years of age.

More recently Carollee Howes, instead of focusing simply on the duration of attendance at early childhood centres, has examined the impact of children's changes of centre (Howes, 1991; Whitebrook, Howes & Phillips, 1990). She has described the disruptive effects of changes of centres and of staff turnover on children's development and social interactions. Some complexities are evident:

> Children's experiences in child care are disrupted when they change child care arrangements as well as when their teachers leave them. We find that children with the most frequent child care changes are generally less competent in their interactions with peers and teachers than children who experience fewer changes. This seemingly simple relation probably masks a set of more complex relations between child care changes and child care quality.
> (Howes, 1991, p. 31)

Carollee Howes has concluded that it is not known whether children in poorer quality centres will benefit from or be harmed by childcare centre changes, but it is clear that a longer stay at a high quality childcare centre is desirable.

Another recent study has also supported the negative impact of changes of childcare centre on children's social development (McCartney, Rochelau, Rosenthal, & Keefe, 1993). Kathleen McCartney and colleagues sampled childcare centres across three different states which varied in the quality of care offered. Preliminary results showed that children who experienced more childcare centre changes were more dependent in their behaviour.

British Research

Research from Britain has also investigated the outcomes of brief attendance at various daycare centres. This research shows that there are educational benefits for children who experience stability of early childcare.

Information collected on the daycare histories of children from birth to 6 years in the Thomas Coram Research Unit Project showed that overall the children tended to change daycare centres quite frequently during their first 3 years (Hennessy, Martin, Moss, & Melhuish 1992). Children who experienced regular changes in daycare arrangements also experienced slower cognitive development than those who spent a longer time at one centre. Between the ages of 3 years and 6 years, those who had changed centres regularly did not fall further behind, but they did not catch up with the children who changed less frequently. Drawing on the TCRU project findings, and research from the U.S. on staff turnover, Eilis Hennessy and colleagues concluded that "children in stable daycare arrangements are more likely to have advanced cognitive development than children in unstable arrangements" (p. 76).

On the basis of these international studies it appears then, that a longer duration of attendance at the same early childhood centre tends to have positive outcomes for children's cognitive development.

Findings from Denmark

Research from the Nordic countries offers additional insights into the impact of the length of time children spend per day in childcare centres. Where both parents experience long working days, there have been some concerns.

Lars Dencik, Ole Langsted, and Dion Sommer (1989) showed that, compared with children from other Nordic countries, Danish children spent more hours per day in daycare. By the late 1980s in Denmark, over 76% of young children were cared for outside the home, 55% were in publicly organised care and 21% in privately organised care. The average time Danish young children spent in centre-based care was 7.2 hours, 5 days per week; with infants and toddlers aged under 2 years spending a little longer than 3- to 6-year-old children (Dencik et al., 1989).

Jacob Vedel-Petersen (1989) pointed to gaps between the actual length of time Danish children spent in care, and their parents' preferences. From a study carried out to gather information about parents' views, Vedel-Petersen reported that mothers stated a preference for 1.5 jobs in the family, with children in day nurseries for half of the day, whereas more women with young children were actually in full-time jobs. This was interpreted as meaning that half-day attendance leaves family members more time for one another and gives children a sense of "belonging" and "security". Unfortunately that report did not provide sampling details about the mothers who participated in the study.

In a more detailed recent report, Jacob Vedel-Petersen (1992) reviewed Scandinavian studies of the effects of attending daycare institutions. These studies tended to report educational benefits for children who attended daycare, including positive outcomes on cognition scores, and in the area of personality development. However, Vedel-Petersen concluded that the number of hours children aged 3 to 6 years spend in nursery schools could become a problem for families where children spend 40 hours or more per week at nursery school. He recommended improving the family's "inner harmony" and reducing exposure to stress by "more flexible gearing of workloads to families' lives". The cost of such schemes needed to be distributed across society so that "families with young children receive full or partial compensation for the loss of income" (Vedel-Petersen, 1992, p. 59).

Aotearoa/New Zealand

Fiona McCloy (1991) carried out a study of influences on the social behaviours of "infants", aged 20 to 24 months, who attended childcare centres in the Auckland region. Her study included 40 "infants" and 16 different childcare centres. Each participating toddler was observed for ½ hour on two separate occasions, and observational records were also kept of group sizes. Outcome observations included records of the toddlers' interactive behaviour events, and time-sample recordings of their Parten Play Scores. A significant relationship was reported between group size and the toddlers' interactions with staff. However, McCloy found that the length of time toddlers were exposed to childcare was a weak predictor of social development outcomes. There were no major differences in the subsequent social behaviour of infants who commenced childcare in the first year of life when compared with those who started later. Consequently, Fiona McCloy suggested that other sources of variability, such as staff-child ratio, staff philosophy, and age grouping of children, may moderate the influence of the length of time spent in childcare.

Summary

Outcomes associated with the length of time young children spend in early childhood care and education are likely to be moderated by aspects of the quality of care received in the centre and at home. International research has suggested overall that stable, regular attendance at high quality education and care centres benefits children's cognitive and social/personality development. Clearly, parents' working conditions have some influence on the length of time children spend at early childhood care centres. Therefore there also appears to be a case for financial support of families, to balance the length of time that parents spend in the workplace and children spend in early childhood centres.

OUTCOMES OF DIFFERENT TYPES OF EARLY CHILDHOOD PROGRAMMES

Research from the United States

Evaluation of Specific Programmes

A range of compensatory early childhood programmes has been developed and evaluated in the U.S. Several programmes, initiated during the Johnson administration, were part of a "War on Poverty" in the mid-1960s.

Project Head Start commenced in 1965 as a summer programme for economically disadvantaged children. Later Head Start expanded to become a very large-scale intervention scheme with a variety of different programmes, some involving drill-and-practice learning procedures, others emphasising children's problem solving experiences. Government support for Head Start has continued, with President Bush "requesting a $500-million increase for Head Start" in the late 1980s (Holden, 1990, p. 1400). At least several hundred evaluations of Head Start programmes have been reported, and several attempts have been made to synthesise the findings of these studies. Lawrence Schweinhart and David Weikart (1986a) have reported on the methods and findings of The Synthesis Project which included 210 evaluation studies which varied in the rigour and quality of their designs. Overall the studies demonstrated consistent short-term gains for Head Start Children. There were few studies on long-term outcomes, and these showed some mixed findings. However, Head Start children were less likely to "fail in a grade or be assigned to special classes than children who did not attend Head Start" (Schweinhart & Weikart, 1986a, p. 53).

A critical analysis of the evaluations of Head Start has been reported by Jackson Cole and Valora Washington (1986). As well as pointing out the limitations of the IQ tests used to assess the effects of the Head Start programmes, Cole and Washington called for a more comprehensive and accurate assessment of how effectively the Head Start programmes meet their objectives. Herbert Zimiles (1986) has argued that long-term effects of compensatory early childhood education programmes have been influenced by the quality of the programmes, the vulnerability of participating children, and the needs of their families.

Numerous studies have been reported on the outcomes of the Perry Preschool Program of the High/Scope Educational Research Foundation, initiated by David Weikart and colleagues (e.g., Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; Schweinhart & Weikart, 1983; Schweinhart, Berrueta-Clement, Barnett, Epstein, & Weikart, 1985; Schweinhart & Weikart, 1986b; Schweinhart, Weikart, & Toderan, 1993; Weikart, 1987, 1989). This programme was developed in Ypsilanti, Michigan in 1962, to

cater for the learning needs of Afro-American children who were poor and considered "at risk" for failing in school (Weikart, 1987). The researchers planned to study the lives of 123 children, including an experimental group who participated in the programme, and a matched control group who did not (Berrueta-Clement et al., 1984; Weikart, 1987). Positive findings about educational benefits were reported throughout the study. The long-term follow up showed that by age 27 years, those who had attended the programme showed greater social responsibility in terms of fewer arrests, and notably fewer arrests for drug dealing, higher economic status, and significantly higher educational performance. Schweinhart et al. (1993) reported that 54% of the non-programme group completed 12th grade or a higher level of education, compared with 71% of the group who had attended the preschool programme.

As Ron Haskins (1989) has noted, the Perry Preschool Program produced more consistently positive findings on welfare, crime, and employment than those reported from other studies of compensatory programmes, for example from the Consortium for Longitudinal Studies (e.g., Lazar, Darlington, Murray, Royce, & Snipper, 1982). However, many other studies of compensatory programmes have also reported at least short-term positive effects of compensatory early childhood education on children's achievement at school (e.g., Balasuhramanian & Turnbull, 1988; Layzer, Goodson, & Layzer, 1989). Contradictory evidence has been reported on the medium- to long-term academic benefits of some compensatory programmes. This probably led researchers to examine more closely the characteristics of the programmes they evaluated (see Alexander & Lovelace, 1988), and also to explore aspects of development such as the "plasticity" of children's intellectual development (Ramey, Yeates, & Short, 1984). More positive findings on children's ongoing school achievement have been reported from the more "exemplary" or higher quality compensatory programmes (Campbell & Ramey, 1991; Rachal & Garbo, 1988).

Douglas Powell (1986) has pointed out that much of the research on early childhood programme models in the U.S. has involved children from predominantly low-income, Afro-American families, and these findings cannot be generalised to all populations. Nevertheless, a few studies have investigated the effects of different early childhood and care programmes on children from middle-class or more economically privileged families (e.g., Larsen & Robinson, 1989).

Jean Larsen and Clyde Robinson (1989) carried out a study of 196 second and third grade children followed up in five waves. Participants included 125 children who had attended a university preschool, and 71 children who had not attended early childhood care and education centres. The preschool programme emphasised social interaction, and "involvement learning" which involved spontaneous self-selection of a range of indoor and outdoor activities, group discussions, and creative activities. Mothers and fathers were all required to participate, by receiving information in a mode which they were able to choose, for example by reading, listening to tapes, receiving home visits, attending lectures, or participating in workshops. The researchers found that, for boys, attendance at early childhood education centres significantly enhances later achievement at school, and in particular achievement in language-related areas.

Some researchers studying childcare programmes have shown that, compared with the children's socio-economic background, the quality of the programme has a more important influence on educational outcomes. Kathleen McCartney (1984) reported that the quality of daycare programmes, including the language and reasoning used with the children in the centre, was a strong predictor of children's subsequent scores on 4 different language measures. She concluded that high quality childcare is an effective form of early childhood intervention because of the beneficial effects on children's language development.

Several researchers have asserted that there have been fewer sustained, positive educational outcomes from programmes that use drill-and-practice methods and formal didactic teaching (Miller & Bizzell, 1983; Sigel, 1991; Stipek, Daniels, Milburn, & Feiler, 1993). Irving Sigel has commented that "decisions about programme goals and methods are often grounded in attitudes and beliefs that may not be amenable to change even in the face of contrary data" (Sigel, 1991, p. 90). This assertion offered a challenge to policy makers, early childhood personnel, and researchers to adopt a more flexible approach to programme implementation, with the aim of ensuring optimal educational benefits for children.

In another study concerned with characteristics of types of programmes, Deborah Stipek, Denise Daniels, Darlene Galluzzo, and Sharon Milburn (1992) investigated different approaches used in early childhood education programmes. The researchers observed in detail the practices and social climate at 62 preschool and kindergarten programmes provided for children from middle-class families and from poor families in the U.S. Stipek et al. (1992) reported that public programmes serving children from poorer families were of similar quality but actually had slightly better staff-child ratios, when compared with the programmes experienced by middle-class children. Preschool and kindergarten programmes were classified into three categories: "didactic" programmes where academic skills were emphasised, "child-centred" programmes with more emphasis on providing a positive social context, and "intermediate" programmes.

In a subsequent report, Deborah Stipek and her colleagues described the effects of the different programmes on children's social-motivational development (Stipek, Daniels, Milburn, & Feiler, 1993). The study included 123 young children in preschools and 104 children of kindergarten age; two-thirds of the children were from minority groups and one-third were white. Compared with children in the child-centred programmes, children participating in the didactic programmes had significantly higher scores on letters but similar scores on numbers (assessed on an adapted form of the Woodcock-Johnson Achievement test). However, compared with children in child-centred programmes, children in didactic programmes also had significantly lower expectations for success on a copying and a puzzle-solving task, they rated their number ability lower, they showed more dependency on the experimenter, they smiled less frequently on completion of tasks, and they rated more highly the amount they worried about preschool. Therefore, Stipek et al. concluded that children from child-centred programmes experienced more benefits in terms of social-motivational outcomes.

Guidelines on Quality of Programmes

Various research studies and reviews have described the types of early childhood programmes that support young children's subsequent development (e.g., Moore, 1987; Pancrazio, 1985; Stipek et al., 1993; Swich & Castle, 1985). Shirley Moore (1987) presented some guidelines for programmes and practices, based on her summary of the research on daycare effects on young children. The most important prerequisites to developing effective programmes were identified as: centre/group size - having "moderate" sized groups of children at sessions, having adequate teacher-child ratios, and well trained staff.

Sally Pancrazio (1985) described three types of pre-kindergarten programmes available for children aged under 5 years in Illinois: Head Start, preschools, and daycare. Drawing on research by David Weikart and others, Pancrazio discussed findings on the outcomes of different kinds of pre-kindergarten programmes and services. Characteristics of all high quality programmes included: having a full-time instructional leader supervising adherence to curriculum goals; appropriate staffing, with "dedicated mutually supportive staff providing individual attention to children", clearly defined curriculum goals, parent involvement, programme continuity, and support from nutritional and health care services. The curriculum was more likely to be beneficial where the goals were "focusing on the child's developmental readiness and including active learning of language and number concepts, planning and problem solving, and a high level of adult-child and child-child interaction" (Pancrazio et al., 1985, p. 14).

Kevin Swich and Kathryn Castle (1985), who reviewed relevant research on programmes for young children, reported a set of guidelines for developing effective early childhood programmes. In the same publication, Milly Cowles (1985) and Mac H. Brown (1985) also analysed the impact of early childhood curriculum on children's learning and development. Drawing on Lazar and Darlington's longitudinal studies and other relevant research, Cowles concluded that effective early childhood programmes have a curriculum designed to meet children's individual developmental levels (see e.g., Lazar et al., 1982). Brown (1985) summarized the characteristics of quality programmes as: play; teachers who focus on facilitating children's learning; organised curriculum experiences planned by flexible, encouraging teachers; opportunities for children to conceptualise experiences through adult assistance and using a variety of media; recognition and understanding of young children's emotions and thinking; and the inclusion of parents and the community in planning.

A review by Neena Balasuhramanian and Brenda Turnbull (1988) outlined the characteristics of the compensatory programmes which produced long-term positive educational outcomes for children. They concluded that the essential components of exemplary projects were: having the curriculum and teaching practices based on principles of children's learning, having ongoing parent participation, and including periodic monitoring and evaluation.

The National Association for Education of Young Children (NAEYC) has published information about developmentally appropriate and inappropriate practices in early childhood programmes (Bredekamp, 1987). Their comprehensive set of guidelines, which emphasises Piagetian and child-centred approaches to learning, has gained international recognition. However, a few early childhood researchers in the U.S., drawing on alternative theories such as that of Ausubel, have continued advocating more structured early childhood programmes (e.g., Fowell & Lawton, 1992).

Recent research has also emphasised that funding levels impinge on the quality of programmes. Bruce Fuller, Stephen Raudenbush, Li-Ming Wei, and Susan Holloway (1992) investigated the independent influence of childcare policies on the quality of centres by conducting a national survey of 1,805 childcare centres in 36 states. The researchers reported that centres with higher quality programmes and practices generally received greater subsidies. The centres with higher subsidies included, but were not limited to, Head Start centres.

Bilingual Children and Early Childhood Programmes

The cultural and language contexts of preschool children from minority groups have become a focus of some researchers in the U.S. (e.g., Laosa, 1991; Soto, 1991; Wong Fillmore, 1991). Luis Laosa, who developed a theoretical framework and approaches to research to cater for the inclusion of families from minority groups, has advocated a "socio-culturally relativistic paradigm" (Laosa, 1989). Laosa's framework challenged researchers to interpret young children's learning and development within the appropriate cultural contexts. More recently Luis Laosa has examined professional ethics regarding the generalisability of findings from the cultural context of one early childhood population to another different population (Laosa, 1991). One relevant ethical question raised by Laosa was: what does one do if there is evidence that the positive results of an evaluation are generalisable (for example, the benefits of an early childhood programme), when the service or programme concerned might be inappropriate for the non-mainstream population?

Lily Wong Fillmore (1991) has explored a related issue. She expressed concern about the recent expansion in the U.S. of early childhood programmes designed to enhance the learning and development of children from minority groups:

> Over the past 5 years or so, early education has been touted as the ideal solution to the academic problem of language-minority students, whether these students are immigrant, nonimmigrants or Native Americans.
> (Wong Fillmore, 1991, p. 324)

Citing the situation in the state of Texas, where for some years legislation has required the provision of preschool programmes for 4-year-old children from minority

backgrounds and a recent extension to the legislation has also covered 3-year-old children, she contended that such programmes lead to the erosion of children's primary languages.

Canadian Studies

Bilingual and Immersion Programmes

In an analysis of early childhood programmes and research in Canada, Andrew Biemiller, Ellen Regan, and Donna Lero (1985) discussed the "cultural and linguistic realities" of early childhood education. They noted that during the mid-1980s, when 68% of the population was classified as Anglophone and 32% as Francophone, there was a rapidly growing movement in English-speaking Canada to provide bilingual education, and in some cases French immersion programmes, from early childhood onwards.

A more recent review of multiculturalism in early childhood education by Karen Mock (1990) outlined the implications of Canada's federal government policy of "multiculturalism within a bilingual framework" (p. 109). Mock also addressed the situation of language differences within early childhood centres:

> The bureaucratic "culture" of child-care services delivered in English presents insurmountable obstacles to many immigrant and minority families. We need qualified interpreters with detailed knowledge of the child-care system in Canada, as well as qualified translators... Where numbers warrant, linguistically diverse staff should be hired.
> (Mock, 1990, p. 121)

Anne Lindsay (1990) examined research and other literature concerned with the relationship between Native Indian children's discourse and their socio-cultural background, and the implications for appropriate early childhood care and education in the Canadian context. Lindsay recommended that the written materials used in early childhood programmes should reflect awareness of the poetic style of the indigenous Indian narratives.

To date in Canada, few or no studies have been published that have focused specifically on the maintenance of indigenous languages through early childhood programmes. However, the need for language maintenance has been documented clearly by the National Indian Brotherhood, Assembly of First Nations (1988):

> Aboriginal languages deserve official status within Canada, constitutional recognition, and accompanying legislative protection. The federal government is obligated to provide adequate resources to First Nations to ensure the development of language structures; curriculum materials; First Nations

> language teachers; resource centres; and immersion programs. Aboriginal language instruction is necessary from preschool to post-secondary and adult education. (p. 16)

The National Indian Brotherhood, Assembly of First Nations (1988) specified the benefits of early childhood education for First Nations children as: providing a head start in acquiring cognitive and motor skills, and maintaining language and culture.

At a special chiefs' conference on education held in Ottawa in November 1991, further recommendations were made regarding "aboriginal languages and literacy". Participants emphasised the need to raise awareness of First Nations languages in homes and communities. It was recommended that action should be taken towards "creating language nests in the communities for daycare" (National Indian Brotherhood, Assembly of First Nations, 1991, p. 20).

England and Wales

Quality of Programmes

Sandra Jowett and Kathy Sylva (1986) compared the short-term outcomes of two early childhood programmes in the U.K. One programme was staffed by professionals, the other by para-professionals. Jowett and Sylva observed the children's behaviour, including their independence and their learning orientation, after they entered school. The researchers reported more orientation towards learning and greater persistence with learning among children who had attended the early childhood programme with professional, trained staff.

Kathy Sylva (1990) has continued to emphasise the importance of evaluating different early childhood education programmes, in order to improve quality, to show effectiveness, and to attract sufficient funding for the early childhood sector. Sylva listed specific trends in early childhood development programmes across countries and communities. She noted that the need for a developmental curriculum has been widely recognised, with an emphasis on benefits to children's whole development; that the "deficit theory" about children of the poor has been abandoned, with programmes now incorporating greater cultural sensitivity; that family involvement has become more widely emphasised; that partnership with communities and with other community services has become more developed; that children with special or particular needs have become a focus; that care and education have become integrated; that many different models are needed to suit both local and national needs; that diverse types of training exist, including ongoing in-service training and support; and that moral/survival education and green education have become important in early childhood programmes. The way in which outcomes of early childhood education and care have been measured also received some attention in her report. Sylva emphasised the ongoing relevance of small-scale observational and

qualitative studies. She predicted that in the future, provision and costing of different programmes would be monitored carefully; that IQ measures would rarely be used but that school data, observations of children's social development, and functioning in the adult world should remain useful outcome measures; and that early childhood settings, and parents' perceptions and participation, would continue to be examined.

Bilingual and Immersion Programmes

Several reports have described bilingual early childhood programmes in Wales (e.g., Arnberg, 1982; Holmes, 1991). In 1982 Lenore Arnberg, a Swedish specialist who visited early childhood programmes in the U.K., suggested that English playgroups and mother-toddler groups could be extended in functions to include teaching the children their mother tongue. She reported on the Welsh-medium nursery schools and playgroups available to young children in Wales, commenting favourably on the language-maintenance benefits for children.

Tony Holmes, visiting from New Zealand, observed that Welsh control over educational resources had facilitated the "full implementation of bilingual policies in community pre-schools, nursery, primary, and secondary schools, and tertiary institutions" (Holmes, 1991, p. 167). From the late 1960s the status of Welsh-medium education had increased. By 1985 the Welsh-medium nursery schools and playgroups and parent-toddler groups (Ysgolian Meithrin) catered for around 6,000 children, who continued developing their competence in the Welsh language by moving on to bilingual schools.

Sweden

Quality of Programmes

Lars Gunnarsson (in press) has outlined the different types of public childcare programmes available in Sweden, including day care centres, parent co-operative centres, part-time preschools, and forms of family daycare. In 1987 the Swedish National Guidelines and Recommendations were prepared as the educational programme for all preschools, to optimise the quality of all programmes, thereby increasing the benefits for children. The guidelines, which reflected the developmental importance of the interactions between children and their environment, included principles of caregiving and play which aimed to meet children's physical, social, emotional, and learning needs. The "Educational Program for Preschools" also specified the importance of "nature" and an ecological perspective, "culture" -cultural heritage and transmission, and "society" - which included fostering democracy, equality, and solidarity. The principle of fostering active parent involvement was also addressed in detail (Gunnarsson, in press, p. 783-785).

Quality of Programmes

Anne Smith and David Swain (1988) have specified desirable criteria for quality childcare programmes, including: small groups; high staff-child ratios; trained staff; stable staffing; planned, child-centred educational programmes; interesting, safe physical environments; parent access to programmes; and sensitivity to individual differences. The term "educare" has been used by Anne Smith (1988, 1993) to emphasise the importance of both the educational and the care components of quality early childhood programmes:

> Educare is provided in caring, responsive social contexts where adult-child and child-child interactions and opportunities for play and exploration promote children's social and intellectual development. Educare services are organised, supervised programmes with social and educational goals for children in the temporary absence of their parents.
> (Smith, 1993, p. 3)

Sara Farquhar (1993) investigated perspectives on quality and the quality of practices at four different types of early childhood centres located in the Otago region. The participating centres included 4 kindergartens, 3 childcare centres, 2 playcentres, and 2 kohanga reo. Staff and parents from the centres and "national experts" on early childhood care and education participated. Methods used included questionnaires, meetings with centre representatives, participant observation of charter development, and evaluations of centre quality. Although the quality of the centres was observed, the concurrent or ongoing experiences of the children were not emphasised in this study. Farquhar reported that staff and "experts" placed more emphasis than parents did on parent involvement and on the relationships between home and centre settings. The findings suggested that there was a range of values and perspectives on quality early education and care. Parents and staff viewed the programme goals associated with children's social-emotional, language, and physical development as most important.

A collaborative exercise co-ordinated by Helen May and Margaret Carr has led to the development of guidelines for a national early childhood curriculum in Aotearoa. Carr and May (1993) have provided a background summary of local curriculum issues, and of some of the key issues addressed in their draft early childhood curriculum, which includes: an ecological view; a concept of *Te Whariki* or weaving, which suggests that there is no set way to develop an early childhood programme; an assumption that curriculum should change and develop; and an emphasis on a two-way relationship with the school curriculum.

Outcomes of Different Programmes

Anne Smith, Patricia Inder, and Brenda Ratcliff (1993) recently investigated the relationship between 103 children's experiences of different types of early childhood centres and their subsequent social behaviour in school. The children, aged 7 to 9 years, attended primary schools in Dunedin (18 schools) or Wellington (4 schools). They were assigned to 1 of 4 different groups according to their early childhood background: (1) kindergarten (part-time attendance by children aged 3 and 4 years); (2) combined concurrent childcare (with 2 or more childcare arrangements of more than 20 hours per week, for at least 1 year from birth to age 4 years); (3) full-time childcare (more than 20 hours per week, for at least 1 year from birth to age 4 years); and (4) combined sequential childcare (with different childcare or preschool arrangements at different ages). Independent observers coded the children's interactions with their teachers and with other children. Teachers' ratings of the children's behaviour were also obtained. Overall, the results showed a very low level of negative interactions with peers and with teachers. When differences in socio-economic status and parents' school qualifications were accounted for, there were no major differences between the groups on observed behaviour or on teacher ratings. On the basis of these findings, Anne Smith and colleagues has suggested that social interaction outcomes seem similar for children who "experienced extensive non-maternal child care early" and "their peers who started kindergarten rather later" (Smith et al., 1993, p. 26). This conclusion was consistent with comments made previously about the similarities in children's experiences at New Zealand childcare centres and kindergartens (Smith, 1988).

Currently, Anne Meade, Anne Hendricks, and Cathy Wylie (in progress) are investigating the influences of early childhood experiences on children's competence. The children and families participating in the pilot study included groups from: a community childcare centre, an urban playcentre, a rural playcentre, a kindergarten, a family daycare scheme, and a Samoan language nest. A small group of non-users of early childhood services was also located, although it was difficult to access this group in Wellington, New Zealand where there are very high rates of participation. In addition, an in-depth action research study is in progress, focused on the effects of early childhood staff and parents jointly observing and "nourishing" children's schema development. Subject to funding being made available, the research team intend conducting a longitudinal study of 300 children, including the non-users and action research participants, through into the next century.

Bilingual and Immersion Programmes

Takuta Augie Fleras (1983) wrote a preliminary report on the organisation, objectives, and implementation of the kohanga reo (Maori language nests). Fleras observed that there appeared to be tensions for the kohanga reo movement between Pakeha oriented aims and Maori aspirations: the "Pakeha oriented factions focused on the development" of children and their preparation to achieve at school, whereas the "Maori inspired

factions focused on language and Maoritanga..." (Fleras, 1983, p. 42). Having noted a potential division between Pakeha and Maori aims, this review attempts to summarise the educational outcomes of the kohanga reo in terms of te reo Maori and tikanga Maori.

Clearly, the benefits of the Kohanga Reo movement have been identified (Government Review Team, 1988; Report of the Ministerial Planning Group, 1991). In 1988, the government review of Te Kohanga Reo provided strong support for the appropriateness of the kohanga reo for children aged under 5 years, for the whanau, and for Maoridom:

> Our conclusion is that Te Kohanga Reo is a vigorous lively movement which is reaching young families who would not have participated in existing early childhood services. Both Maori and Pakeha, teenagers, parents with young children and kaumatua travelled long distances to spend one night on a marae in order to tell the review team of the importance of the Te Kohanga Reo movement and what it meant to them personally. The kohanga reo kaupapa is powerful in drawing people together to support each other and work towards the ultimate goal of a bilingual and bicultural nation as envisaged in the Treaty of Waitangi.
>
> The National Trust goal of ensuring 75% of Maori children under five speak the Maori language within the next 10 years is supported throughout Maoridom.
> (Government Review Team, 1988, p. 47)

The Review Team reported that, as well as the expected language maintenance and revival outcomes for children and families, the kohanga reo movement had revitalised Maori culture and had empowered Maori communities:

> The Kohanga Reo has arrested the fragmentation of the traditional cultural base... Te Kohanga Reo has revitalised the use of the marae, and is helping preserve the Maori language which is an endangered taonga. All this has come about through the autonomy of the kohanga reo within the kaupapa, which has meant that the kohanga reo whanau have had to acquire administration and management skills and take responsibility for the consequences of their own decisions. They are responding to this challenge.
> (Government Review Team, 1988, p. 47)

Summary

Evaluations of a range of compensatory early childhood programmes developed in the U.S. have shown that high quality programmes which are adequately staffed and funded can have short and longer term beneficial effects on children's educational achievement. More recent research has suggested that high quality programmes which are more child-centred rather than drill-and-practice oriented tend to be associated positively with children's cognitive, language, and social development. In the international literature on outcomes of types of early childhood programmes, the problem of erosion of children's primary languages has also been addressed. Both internationally and in Aotearoa/New Zealand, some characteristics of quality early childhood programmes have been identified as: high staff-child ratios and small groups sizes; trained staff and ongoing in-service training and support; stability of staff and children; planned, child-centred educational programmes; interesting, safe physical environments; active, democratic parental participation; sensitivity to individual differences; and language maintenance, cultural sensitivity, and cultural revival. In Aotearoa, there appear to be few differences in the social interaction at school of children who have attended kindergarten and childcare centres. The benefits of the Kohanga Reo movement have been documented, including maintenance and revival of te reo Maori, strengthening of the whanau, and the revitalisation of the marae.

BENEFITS OF VARIOUS TYPES OF PARENTAL INVOLVEMENT

Research from the United States

In the research literature from the U.S., it has been widely accepted that parent involvement has a positive influence on the outcomes of early childhood care and education for children (e.g., Gnezda & Smith, 1989; Kagan & Rivera, 1991; Landerholm & Karr, 1988; Swick, 1985). However, there appears to have been less consensus about the most appropriate types of parental involvement, and there have been some recent new developments.

Several studies have supported the benefits of the parent involvement component of the Head Start programmes and of other early childhood education programmes developed for "at risk" children (e.g., Copple, Cline, & Smith, 1987; Hans, 1987; Lennon, 1989; Peters, Bollin, Murphy, & Berg, 1987). Overall, these studies have reported positive outcomes of parental involvement. The type of parent involvement emphasised has been that of staff members supplying information for parents and showing parents (usually mothers) how to teach their own children.

More recently, Angela Taylor and Sandra Machida (1993) carried out a study of 79 children, with an average age of 4 years 5 months, drawn from 8 Head Start classrooms in a rural Californian county. Taylor and Machida investigated the effects of parents' active participation in the programme activities, and of children's perceptions of their parents' acceptance and support. There was a significant, positive relationship between the children's perceived support received from their parents, and the children's perceptions of their own cognitive competence. Parental involvement in the Head Start programme was a marginally significant predictor of the children's academic readiness and of the teachers' ratings of the children's orientation to tasks.

Elizabeth Landerholm and Jo Ann Karr (1988) have pointed out that parental involvement components are mandatory for these early childhood programmes and activities: Head Start, P.L. 94-142, the Handicapped Children's Early Education Program, State Planning grants, and P.L. 99-457 (for working with families of disabled infants from birth to 2 years of age). They described four types of parent involvement characteristic of Head Start and programmes for children from birth to 3 years as "providing information to parents about child development" and other topics, "teaching parents to teach their own children," "teaching parents to teach other children in the classroom," and "teaching parents to become involved in leadership activities" (Landerholm & Karr, 1988, p. 12-13). Concern with parents' stress and parental support was identified as a more recent trend. Landerholm and Karr recommended that there should be more evaluation of parents' needs, and that parental participation should be

planned with reference both to the individual learning needs of parents, and to the kinds of stress that parents are experiencing.

Edward Zigler, Cara Taussig, and Katherine Black (1992), who reviewed research on the influence of early childhood programmes in preventing juvenile delinquency, identified the importance of parent support. The authors reported that early childhood intervention programmes not only taught parents about appropriate childrearing practices, but also provided support for parents. Parent and family support was one component of early childhood intervention programmes found by the researchers to improve children's home environments, partly by reducing parents' stress and alienation.

The need for further research on family support and education programmes in the U.S. has been advocated by Douglas Powell (1989). Powell also stressed the importance of collaboration between early childhood programmes and families. Close collaboration appeared to improve the continuity of children's socialisation experiences, thereby enhancing developmental outcomes.

A number of researchers have reported that parents' perceptions, satisfaction, and stress are related to the quality of centre-based infant care - and therefore to the outcomes for children (Bradbard & Endsley, 1986; Honig & Caldwell, 1981). Bradbard and Endsley (1986) and their team of researchers have developed a model, based on Urie Bronfenbrenner's ecological theory (Bronfenbrenner, 1979; Bronfenbrenner, Alvarez, & Henderson, 1984). They designed their model to explain influences on mothers' satisfaction with childcare services. Potential influences included: individual factors and needs, for example, concept of self as a worker, mother, and spouse; nuclear family factors; local community factors such as support from employers, co-workers, experts, friends and neighbours; and society level factors including political climate, media messages, and economic conditions.

A further recent focus has been on collaboration and power sharing between parents and professionals. Sharon Kagan and Marie Rivera (1991) examined the process of collaboration in early care and education. They cited research supporting the effectiveness of shared authority and decision making in collaborative endeavours. Shared leadership, with committees, boards, or meetings co-chaired by parents and professionals, has been one type of collaboration which encourages "the development of new leadership talent" and helps "to stem burnout and disaffection for isolated leaders" (Kagan & Rivera, 1991, p. 54).

Canadian Studies

In a review of the outcomes of parent involvement in early childhood programmes, Margie Mayfield (1990) noted that many positive effects have been reported. However, she cautioned that benefits are not automatically guaranteed to every programme which includes parent involvement, and pointed out that "a variety of types of parent involvement have been included in Canadian early childhood programs" (Mayfield, 1990, p. 243).

Drawing on Gordon and associates' work on types of parent involvement in early childhood education, Margie Mayfield showed how Canadian centres have fitted into six different levels of participation: "parents as audience", "parents as adult learners", "parents acting as teachers of their own child at home", "parents as volunteers", "parents as paraprofessionals or paid workers", and "parents as decision makers". Mayfield (1990) explained further that the "parents as audience" level involved parents in visiting and observing the early childhood centre, attending performances, and receiving newsletters, and she described this level as realistic for many Canadian parents with pressing work and family commitments. Examples of the "parents as adult learners" model included parent effectiveness programmes, prison-based parenting courses, and Ontario Welcome House programme for immigrant families which provides care for infants, toddlers, and preschool children while their mothers attend language or citizenship classes. "Parents acting as teachers of their own child at home" included: infant development or intervention programmes as in Ontario and British Columbia, parents reading to their infants and young children, toy libraries, public libraries, parent-child centres, and community organisations. Under "parents as volunteers" there were examples of parent helping activities both in the centres and at home, including the parent co-operative nurseries that are staffed partly by parent helpers. The Native Infant Program was cited as one situation where parents or other members of the community work as "paraprofessionals or paid workers". Finally, the "parents as decision makers" level has taken effect where centres have been established through the initiatives of parents, and in parent co-operative nursery schools. Mayfield recommended that further constructive evaluation of the impact of these different types of parent involvement was required.

Jean Stevenson (1990) described the origins and approaches of the parent co-operative programmes in Canada. As indicated by Mayfield (1990), these programmes have tended to include active parent participation, with parents involved as volunteers and as decision makers. Citing research in progress by Glen Dixon at the University of British Columbia designed to explore a "non-deficit" approach to parent-teacher relations, Jean Stevenson suggested that current Canadian research "could lend much-needed authenticity to some of the precepts long esteemed in the parent cooperative philosophy" (p. 238).

British Research

British research has shown some emphasis on the needs of parents and families, and on the level of participation parents experience in early childhood centres. Research by Peter Moss (1986) showed that mothers using nursery (centre-based) care for their infants discussed the quality of care received in relation to their own and their infants' needs.

A British study of preschool attendance and long-term educational benefits for children, the Child Health and Education Study (CHES), has specifically addressed the topic of parental involvement (Osborn & Milbank, 1987). A large cohort of all children born in England, Scotland and Wales during 1 week in 1970 was surveyed longitudinally up to the children's 5th birthdays and in many cases to age 10 years. The researchers reported that there were considerable differences in the amount and type of parental involvement experienced by the participants. Types of parental participation included: rostered parent helping, practical helping, attending social events, planning and management, consultative committees, and attending discussions. Preschool services used included maintained ones: LEA (Local Education Authority) nursery schools, LEA nursery classes, LA day nurseries; and independent ones: nursery schools, day nurseries, hall playgroups, and home playgroups. Regular parent helping was most likely to occur at the hall playgroups (68%), and least likely to occur at the LEA nursery classes (16.5%), with the LEA nursery schools also receiving very little rostered parent help. The hall playgroups were also more likely than any other service to include parents in planning and management (52.2% of hall playgroups).

The researchers compared the educational progress of the children whose mothers were involved, with the progress of those whose mothers were not involved. Children at institutions with regular parent helping achieved more highly on the measures administered at age 5 years and 10 years (a Copying Designs test, the English Picture Vocabulary Test, a reading test, and a communication assessment), although none of the differences reached statistical significance. After "adjustment for the type of institution attended and the child's own home and social background", there were no differences in the test scores of children whose mothers had been parent helpers and those who had not (Osborn & Milbank, 1987, p. 197). The researchers also found that parental involvement and parental interest had some influence on the relationship between children's preschool experience and their test scores. Despite some complexities in the results then, it was concluded that parents' involvement in their children's early childhood centre was associated to some degree with subsequent educational benefits for children.

Gillian Pugh (1988) reported a 3-year national study that investigated the extent to which services for families with young children were "planned, implemented and delivered in partnership with those families for whom they were intended" (Pugh, 1988, p. 1). Pugh carried out a large-scale survey, and then an in-depth study in nurseries and centres where good work on parent involvement was said to be in progress. However, even at the "good" centres studied in depth, the researchers found little evidence of parents

participating actively in the classrooms or working with teachers on planning activities. Gillian Pugh (1988, 1992) has explained the importance of staff learning from parents, of partnership, and of negotiation and consultation between staff and parents.

The Nordic Countries

In Denmark, there have been both informal and formal arrangements to ensure that parents have an influence on decision making at early childhood centres. Currently, all public-sector daycare centres are required to have "a board with a majority of parental representatives" (Social Ministeriet, 1992). The policy of provision of public daycare is also seen as a form of financial support for parents and families.

In Sweden, Goran Lassbo (1992) has reported a series of studies intended to adapt quality public childcare to the needs of local consumers. According to Goran Lassbo, the formal aims for the national Swedish public childcare programme have emphasised the shared responsibilities of parents and centre personnel. Lassbo's (1992) operative definition of quality stated:

> the degree of quality in the care of young children is represented by the common agreement and satisfaction between the main caregivers, the parents and the childcare personnel, on aspects covering the care, the socialization and the education of the child.
> (p. 2)

His research aimed to facilitate co-operation between parents and childcare personnel in defining the practice of quality within the context of local needs. The intention was to evaluate existing programmes, to provide feedback to involved parties including parents and centre personnel, and to organise built-in continuous local evaluation and adaptation. Relative ratings of parents and personnel were used to produce and adapt evaluation profiles at the local childcare centres. Goran Lassbo described his approach as a "third step" in defining quality; following firstly, the economists' approach which led to the construction of quantitative indices of quality, and secondly, the developmental approach of linking childcare arrangements to outcomes for children. Lassbo's "third step" research was clearly based on the perspective that staff and parents have the right to influence decision making at early childhood centres, and that the exercise of such rights is important to achieving positive outcomes for children.

Findings from Australia

Don Edgar (1991) identified a need for more Australian and international research on the changing ecology of families. He suggested that studies should investigate childcare experience outside the family, the pace of family life, and the impact of both parents working.

Sharne Rolfe, Janice Lloyd-Smith, and Lyn Richards (1991) conducted an in-depth study of the experiences and perceptions of 10 mothers with infants in full-day care at Melbourne childcare centres. The case studies showed that the women's experiences varied and also changed over time. The authors concluded that understanding the complexity of mothers' decision making and adaptation was highly relevant to understanding the outcomes of childcare experiences.

In a subsequent longitudinal study, Sharne Rolfe (1992) investigated the psychological wellbeing of 156 Australian mothers who were using or not using centre-based childcare for their infants. Compared with women who did not use childcare, women who used childcare for their infants were less anxious about separation from their infants and no more stressed, but they were more depressed. This ongoing research has implications regarding the support parents need to increase the likelihood of their infants benefitting from their childcare experiences.

Aotearoa/New Zealand

A study reported by Margery Renwick (1989) described the contact which occurred between parents and teachers in kindergartens. The study aimed to investigate the types of contact teachers tended to have with parents, and to examine issues related to practices such as home visiting and parent helping. A national sample of kindergartens was surveyed by postal questionnaires, interviews were conducted with a Wellington sample of kindergarten parents, and observations were carried out at a small sample of kindergartens. Variations were reported in parents' expectations of teachers, and in teachers' beliefs about appropriate practices related to contact with parents. Although parents appreciated the role of teachers in caring for their young children, one conclusion from the research was that "the rhetoric of parent-teacher partnership does not always square with reality" (Renwick, 1989, p. 2). Suggestions were made for pre-service and in-service training. This research took place prior to the integration of early childhood care and education training in New Zealand.

Anne Smith and Pat Hubbard (1988) examined the communication which took place between centre staff and the parents of 60 children aged 3 and 4 years who attended kindergartens and childcare centres (full-time) or childcare centres (combined care). Observations of staff behaviour, and structured interviews of mothers and fathers, were

used to investigate staff-parent communications and relationships. Many parents and staff members perceived information sharing as important, and their conversations tended to be about the children. Compared with kindergarten staff and parents, childcare staff and parents talked more about the children's activities and their problems in the centre and at home; centre policy and programmes; and parents' work and home problems. Smith and Hubbard concluded that supportive networks were evident, but there was a need for more sharing on topics like the goals and values of early childhood education and care.

A collaborative study concerned with meeting the needs of children aged under 2½ years, and the needs of those around them, was carried out in playcentres located throughout New Zealand (Podmore, 1991, 1992). The parents of the young children participating in the study were actively involved in the playcentre programme. Observations of children's interactions showed that older children (aged from 2 years 6 months to 4 years 11 months) frequently demonstrated nurturing behaviour towards infants and younger children (aged from birth up to 2 years 6 months). Older and younger children rarely obstructed one another's play activities. These positive findings about concurrent outcomes for children were interpreted within the context of the playcentres of Aotearoa, where infants and children aged under 2½ years are accompanied by a parent or parent substitute, and sessions have high parental participation and high ratios of adults to children.

Recently Pamela Kennedy (Hanna) (1993) has described culturally appropriate models of parent support, drawing on Douglas Powell's (1989) work. She outlined information about the 28 Maori support projects and 12 Pacific Island parent support projects under the auspices of the Early Childhood Development Unit in Aotearoa.

Summary

Clearly, a range of types of parent involvement has been developed in early childhood centres internationally and within New Zealand. Overall the research has shown that parent involvement is one of the variables leading to positive outcomes for children's social and cognitive development. However, there remains scope for further investigation, within the context of different countries' specific policies and practices, of the outcomes of the types of parent involvement emphasised more recently, including parent support, parents' professional participation, and parents' involvement in decision making.

CONCLUSIONS

International research demonstrates that high quality care is centrally important if infants are to benefit from the experience of centre-based care during the first year of life. Age-related research findings suggest that poor quality early childhood care and education may have negative outcomes, whereas high quality care enhances infants' social and cognitive development. Research from the U.S. and Britain shows that, for 3- and 4-year-old children, attending early childhood care and education centres that have more highly trained staff and quality staff-child ratios has ongoing benefits. In contexts where there is adequate staffing, mixed-age grouping in early childhood centres appears to have beneficial outcomes for children. Research needs to be developed using a partnership approach, with more collaboration between researchers and early childhood centre personnel, to enhance understanding of the outcomes of early childhood care and education for children of different ages. Another strong recommendation is that the research findings should be interpreted within the context of the local conditions and policies.

Outcomes associated with the length of time young children spend in early childhood care and education also appear to be influenced by the quality of care experienced. Parents' working conditions impinge upon the length of time children spend at early childhood care centres, which has further implications for policy makers. Overall, stable, regular attendance at high quality education and care centres has been shown to enhance children's cognitive and social/personality development.

Evaluations of a range of compensatory early childhood programmes developed in the U.S. suggest that high quality programmes which are adequately staffed and funded can have short and longer term beneficial effects on children's educational achievement. Some characteristics of quality early childhood programmes associated with positive outcomes include: child-centred, planned educational programmes; high staff-child ratios; trained staff and ongoing in-service training and support; stability of staff and children; small group sizes; mixed age grouping, provided that the centres have quality staff-child ratios and the adults are committed to age-integration; active, democratic parental participation; and language maintenance and cultural revival. The social interaction outcomes seem similar for New Zealand children who attend childcare centres from an early age and those who commence kindergarten later. The benefits of the Kohanga Reo movement have included maintenance and revival of te reo Maori, strengthening of the whanau, and the revitalisation of the marae.

This review documented research showing that parent involvement is one of the variables leading to positive outcomes for children's social and cognitive development. There is a need for further investigation, within the context of different countries' specific policies and practices, of the outcomes of the more recent approaches to parent involvement. The types of parent involvement emphasised in the current research from parts of the

U.S., Scandinavia, Australia and New Zealand are: parent support, parents' professional participation, and parents' involvement in decision making.

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